

CLAIM OR CLAIMS

What is claimed is:

1. A composition for inducing an immune response in a mammal to solid tumor associated antigens, the composition comprising:

(a) at least one allogenic line of cancer cells providing at least one tumor-associated ganglioside selected from the group consisting of GD-2, GD-3, GM-2, GM-3, GD-1b, and GT-1b;

(b) at least one cytokine selected from the group consisting of GM-CSF, IL-2, IL-4, IL-12 and TNF α ; and

(c) at least one heat shock protein selected from the group consisting of HSP-60, HSP-70 and HSP-90.

2. The composition of Claim 1 wherein said allogenic cell line provides at least two gangliosides selected from said group of gangliosides.

3. The composition in Claim 1 wherein said ganglioside comprises GM-2.

4. The composition in Claim 1 wherein said ganglioside comprises GD-2.

5. The composition in Claim 2 wherein said gangliosides comprise GM-2 and GD-2.

6. The composition in Claim 1 wherein said allogenic cell line provides at least three gangliosides selected from said group of gangliosides.

7. The composition in Claim 6 wherein said gangliosides comprise GM-2, GD-2 and GD-3.

8. The composition in Claim 1 wherein said cytokine comprises GM-CSF.

9. The composition of Claim 1 wherein said cytokine comprises IL-2.

10. The composition of Claim 1 wherein said composition comprises at least two cytokines selected from said group of cytokines.

11. The composition of Claim 10 wherein said cytokines comprise GM-2 and IL-2.

12. The composition of Claim 1 wherein said heat shock protein comprises HSP-90.

13. The composition of Claim 1 further comprising a bacterial adjuvant.

14. The composition of Claim 13 wherein said bacterial adjuvant comprises BCG.

15. The composition of Claim 1 wherein said allogenic cell line further provides leukocyte antigens in common with the mammal to which the composition is administered.

16. The composition of Claim 1 wherein said allogenic cell line is rendered incapable of proliferation by radiation.

17. The composition of Claim 1 wherein said mammal comprises a canine and said allogenic cell line comprises a canine cancer cell line.

18. A method of inducing a systemic immune response in a mammal to solid tumor associated antigens, the method comprising the steps:

(a) providing cells of at least one allogenic cell line providing at least one tumor-associated ganglioside, selected from the group consisting of GD-2, GD-3, GM-2, GM-3, GD-1b, and GT-1b;

(b) providing at least one cytokine selected from the group consisting of GM-CSF, IL-2, IL-4, IL-12 and $TNF\alpha$;

(c) providing at least one heat shock protein selected from the group consisting of HSP-60, HSP-70 and HSP-90; and

(d) concurrently administering an effective number of cells in step (a), an effective amount of said cytokine in step (b), and an effective amount of said heat shock protein in step (c) to said mammal, said administration thereby inducing a systemic immune

response specific to said antigens.

19. The method of Claim 18 wherein said allogenic cell line provides at least two gangliosides selected from said group of gangliosides.

20. The method in Claim 18 wherein in step (a) said ganglioside comprises GM-2.

21. The method in Claim 18 wherein in step (a) said ganglioside comprises GD-2.

22. The method in Claim 19 wherein in step (a) said gangliosides comprise GM-2 and GD-2.

23. The method in Claim 18 wherein in step (a) said allogenic cell line provides at least three gangliosides selected from said group of gangliosides.

24. The method in Claim 23 wherein in step (a) said gangliosides comprise GM-2, GD-2 and GD-3.

25. The method in Claim 18 wherein in step (b) said cytokine comprises GM-CSF.

26. The method of Claim 18 wherein in step (b) said cytokine comprises IL-2.

27. The method of Claim 18 wherein in step (b) said composition comprises at least two cytokines selected from said group of cytokines.

28. The method of Claim 27 wherein in step (b) said cytokines comprise GM-CSF and IL-2.

29. The method of Claim 18 wherein in step (c) said heat shock protein comprises HSP-90.

30. The method of Claim 18 further comprising step (e): providing a bacterial adjuvant and co-administering said adjuvant in step (d).

31. The method of Claim 31 wherein said bacterial adjuvant comprises BCG.

32. The method of Claim 18 wherein in step (a) said allogenic cell line further provides leukocyte antigens in common with the mammal to which the composition is administered.

33. The method of Claim 18 wherein in step (a) said allogenic cell line is rendered incapable of proliferation by radiation.

34. The method of Claim 18 wherein said mammal comprises a canine and in step (a) said allogenic cell line comprises a canine cancer cell line.

35. The method of Claim 18 wherein in step (a), said allogenic cell line comprises approximately 3×10^6 allogenic cells.

36. The composition of Claim 1 further comprising a melanoma-associated antigen.

37. The composition of Claim 36 wherein said melanoma-associated antigen is selected from the group consisting of MAGE-1, MART-1 and GP-100.

38. The method of Claim 18 further comprising step (e): providing a melanoma-associated antigen and co-administering said antigen in step (d).

39. The method of Claim 38 wherein said melanoma-associated antigen is selected from the group consisting of MAGE-1, MART-1 and GP-100.